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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,803	09/26/2003	Atsunori Kitazawa	Q77692	4375

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EXAMINER

KOVALICK, VINCENT E

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/29/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/670,803

Applicant(s)

KITAZAWA ET AL.

Examiner

Vincent E. Kovalick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-25 and 39-46 is/are allowed.
- 6) ☒ Claim(s) 1,26-28,32,33 and 35 is/are rejected.
- 7) ☒ Claim(s) 2-9,29-31,34 and 36-38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/26/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to Applicant's Patent Application, Serial No. 10/670,803, with a File Date of September 26, 2003.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo (Pub. No. US 2003/0048351) taken with Kawashima et al. (USP 6091,203) in view of Imai (USP 6,836,067).

Relative to claims 1, Ohkubo **teaches** an image forming device (pgs. 1/2, paras. 0008-0016);

Ohkubo further **teaches** an image forming apparatus comprising: an image writing means employing organic EL elements (Abstract and pg. 5, para. 0058);

Ohkubo **does not teach** a direct current voltage applying means for applying a direct current voltage to said organic EL elements; and a control means for said direct current applying means; wherein said control means controls said direct current voltage applying means to apply a direct current voltage (V_a), higher than 0V and lower than a threshold voltage, to said organic EL elements during non-printing.

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Kawashima et al. **teaches** an image display device with element driving device for matrix drive of multiple active elements (col. 3, lines 23-67 and col. 4, lines 1-63); Kawashima et al. further **teaches** a direct current voltage applying means for applying a direct current voltage to said organic EL elements; and a control means for said direct current applying means; wherein said control means controls said direct current voltage applying means to apply a direct current voltage (Abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to device as taught by Ohkubo the feature as taught by Kawashima et al. in order to put in place the means to drive and control the image forming organic EL element.

Ohkubo taken with Kawashima et al. **does not teach** the direct current voltage being higher than 0V and lower than a threshold voltage, to said organic EL elements during non-printing.

Imai **teaches** an electroluminescent element display device (col. 2, lines 60-67; col. 3 lines 1-67 and col. 4, lines 1-2); Imai further **teaches** direct current voltage being higher than 0V and lower than a threshold voltage, to said organic EL elements during non-printing (col. 1, lines 61-64).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to device as taught by Ohkubo taken with Kawashima et al. the feature as taught by Imai in order to conserve power during the non-printing periods.

4. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuno et al.(USP 6,998,209) taken with Okado et al. (USP 5,994,019) in view of (Codama et al. (USP 5,627,364); and further in view of Sakata et al. (Pub. No US 2003/0026624) taken with Teremy et al (USP 5,734,91).

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Relative to claims 26 and 27, Ikuno et al. **teaches** an electro photographic photoreceptor and method of using the photoreceptor (col. 4, lines 7-36); Ikuno et al. further teaches an image forming apparatus comprising: a charge bias applying means for a photoreceptor (col. 17, lines 49-53).

Ikuno et al. **does not teach** a development bias applying means, organic EL elements in groups for forming an image on an image carrier, and a density control means for patch images, wherein said organic EL elements in group(s) are controlled to be all lighted before formation of the patch images.

Okado et al. **teaches** an image forming method (col. 3, lines 65-67; col. 4, lines 1-67 and col. 5, lines 1-27); Okado et al. further **teaches** a development bias applying means (col. 29, lines 24-35).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Ikuno et al. the feature as taught by Okado et al. in order to apply a development bias voltage at the time of development.

Ikuno et al. taken with Okado et al. **does not teach** organic EL elements in groups for forming an image on an image carrier, and a density control means for patch images, wherein said organic EL elements in group(s) are controlled to be all lighted before formation of the patch images.

Codama et al. **teaches** an image sensor with thin-film light emission element light source (col. 2, lines 31-67 and col. 3, lines 1-60); Codama et al. further **teaches** organic EL elements in groups for forming an image on an image carrier (col. 6, lines 26-31).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to

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provide to the device as taught by Ikuno et al. taken with Okado et al. the feature as taught by Codama et al. in order to constitute the image presented to the image carrier.

Ikuno et al. taken with Okado et al. in view of Codama et al. **does not teach** a density control means for patch images, wherein said organic EL elements in group(s) are controlled to be all lighted before formation of the patch images.

Sakata et al. **teaches** an image forming apparatus (pgs. 1/2, paras. 0008-0010) ; Sakata et al. further **teaches** a density control means for patch images (pg. 1, paras. 0007 and 0013).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Ikuno et al. taken with Okado et al. in view of Codama et al. the feature as taught by Sakata et al. in order to adjust the toner density to achieve the desired image attributes.

Ikuno et al. taken with Okado et al. in view of Codama et al. and further in view of Sakata **does not teach** said organic EL elements in group(s) are controlled to be all lighted before formation of the patch images.

Teremy et al. **teaches** printing exposure reference (col. 2, lines 27-67 and col. 3, lines 1-2);

Teremy et al. further **teaches** said organic EL elements in group(s) are controlled to be all lighted before formation of the patch images (col. 3, lines 66-67 and col. 4, lines 12-16). It being understood that the image has to be lighted to serve as a reference for the patch development.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Ikuno et al. taken with Okado et al. in view of Codama et al. and further in view of Sakata et al. the feature as taught by Teremy et al. in order to generate patches that related to color correction, image orientation and image location.

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Regarding claim 28, Teremy et al. further **teaches** an image forming apparatus wherein the organic EL elements in all groups are controlled to be all lighted before formation of the patch images (col. 3, lines 66-67 and col. 4, liens 1-16).

5. Claims 32, 33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuno et al taken with Okado et al. in view of Codama et al., and further in view of Sakata et al. taken with Teremy et al. as applied to claim 26 in item 6 hereinabove, and further in view of Izumizaki et al. (USP 6,505,010).

Relative to claims 32, 33 and 35, Ikuno et al taken with Okado et al. in view of Codama et al., and further in view of Sakata et al. taken with Teremy et al. **does not teach** a density control means for patch images, wherein it is controlled to form patch images in an order from the highest density to the lowest density stepwise.

Izumizaki et al. **teaches** an image forming apparatus (col. 2, liens 1-30) ; Izumizaki et al. further **teaches** a density control means for patch images, wherein it is controlled to form patch images in an order from the highest density to the lowest density stepwise (col. 9, lines 9-26); It would have been obvious to a person of ordinary skill in the art a the time of the invention to provide to the device as taught Ikuno et al taken with Okado et al. in view of Codama et al., and further in view of Sakata et al. taken with Teremy et al. the feature as taught by Izumizaki et al. in order to adjust the patch density to correspond with a referenced patch density if the candidate patch density is detected to be difference from the reference density.

Allowable Subject Matter

6. Claims 2-9, 29-31, 34 and 36-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Relative to claim 2, the major difference between the teachings of the prior art of record Ohkubo (Pub. No. US 2003/0048351) taken with Kawashima et al. (USP 6091,203) in view of Imai (USP 6,836,067) and that of the instant invention is that said prior art of record **does not teach** an image forming apparatus wherein at the start of an image writing means, a direct current voltage is applied to organic EL elements and the image writing means is shifted to the printing state

Relative to claim 3, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** an image forming apparatus wherein an image writing means comprises a line head composed of light emitting element lines each of which has a plurality of organic EL elements aligned in the main scanning direct of the image carrier.

Regarding claims 29 and 36, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** an image forming apparatus wherein the organic EL elements in group(s) are controlled to be all lighted before application of the charge bias to a photoreceptor.

Regarding claims 30 and 37, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** an image

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forming apparatus wherein the said organic EL elements in group(s) are controlled to be all lighted before application of the development bias.

Regarding claims 31 and 38, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** an image forming apparatus wherein the organic EL elements in groups are controlled to be all lighted at pauses in application of development bias.

Regarding claim 34, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** an image forming apparatus wherein the patch images are formed by controlling at least organic EL elements in group(s) which form the patch images to be all lighted.

7. Claims 10-25 and 39-46 are allowed.

8. The following is an examiner's statement of reasons for allowance:

Regarding claim 10, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** an image forming apparatus comprising with control means controls a direct current voltage applying means to apply a direct current voltage, higher than a threshold voltage and lower than the voltage applied for printing, to organic EL elements during non-printing with said image carrier being moved.

Relative to claim 19, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** an image forming apparatus comprising: an image writing means employing organic EL elements and a control unit for said organic EL elements, wherein said control unit applies a voltage of opposite bias

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polarity i.e. a voltage of a polarity opposite to that of the voltage of bias polarity for light emission (voltage of emission polarity).

Relative to claim 39, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** an image forming apparatus comprising: an image writing means having a plurality of light emitting element lines aligned in the sub scanning direction of an image carrier, each light emitting element line being composed of a plurality of organic EL elements aligned in the main scanning direction of the image carrier and arranged two-dimensionally; and a control unit for said organic EL elements; wherein the control unit controls such that at least one organic EL element of a plural organic EL elements for forming a latent image of the same dot by means of multiple exposure is lighted at least once during the formation of the latent image of the same dot.

Relative to claim 41, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** an image forming apparatus comprising: an image writing means having a plurality of light emitting element lines aligned in the sub scanning direction of an image carrier, each light emitting element line being composed of a plurality of organic EL elements aligned in the main scanning direction of the image carrier and arranged two-dimensionally; and a control unit for said organic EL elements; wherein said control unit controls such that organic EL elements of at least one of the light emitting element lines arranged in the main scanning direction are all lighted and the line to be subjected to the all-element lighting is switched at predetermined interval.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	5,998,008	Shimamura et al.
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Pub. No.	US 2002/0005887	Nakase et al.
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To Respond

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E. Kovalick whose telephone number is 571-272-7669. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Vincent E. Kovalick
December 20, 2006


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